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ABSTRACT

Three experiments describe the effects of imagery on learning a large and integrated body of information from a college lecture. It was hypothesized that high-imagery phrases would be more easily recalled and would promote recall of abstract verbal phrases in close temporal proximity to them. In experiment 1, 22 undergraduates attended a lecture without taking notes and then wrote down what they recalled before taking a multiple-choice test. In experiment 2, 23 undergraduates participated in a similar experiment with added instructions and a delay between lecture and testing. In experiment 3, 29 subjects were randomly assigned to notetaking or imaging conditions, with a 2-day interval and only the multiple choice (no free recall) test given. All three experiments indicate that highly visualizable material facilitates recall of nonvisual material presented in close proximity to it. Implications for classroom practice are discussed. Three appendixes contain the lecture text, the quiz, and free recall responses. (Contains 12 references.) (SLD)

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Facilitating Lecture Recall: The Effects of Embedded Imagery-Evoking Phrases

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Many studies have addressed the use of imagery in memory tasks, and there is general agreement that visual imagery techniques facilitate recall of new information (e.g., Clark & Paivio, 1991; Jones & Hall, 1982; Levin, 1983; Mastropieri, 1985). Imagery can be either spontaneously or intentionally generated, and that subjects' visual images may represent large chunks of material or meaning, thus reducing the load on working memory.

Paivio (1986) explains imagery as one of two coding processes. Dual coding theory (DCT) proposes that mental structures are networks of modality-specific associative representations, verbal and imaginal, where information from their respective contexts is processed. DCT assumes the existence of associative connections within each code that deal with information within the system, as well as connections between the verbal and imaginal systems.

Most studies investigating imagery have focused on learning discrete items such as paired associates (Bower, 1970; Gorman, 1961; Marschark & Hunt, 1989). Those few that have considered text learning (e.g., Marschark, 1985; Sadoski, 1985; Wharton, 1980) have focused on overall recall rather than on specific effects particular visual images might have.

The studies described here examined the effects of imagery on learning a larger, more integrated body of information--in this case, a college lecture. Interspersed throughout the

lecture were phrases that promoted vivid visual images. We hypothesized that, because of the associations between visual and verbal codes that Paivio proposes, and because of ppossible spreading activation from one retrieved item in long term memory to another (e.g., see Anderson, 1990), not only would these high-imagery phrases be more easily recalled, they would also promote recall of abstract verbal phrases in close temporal proximity to them.

Experiment 1

The format chosen for this study was an oral lecture delivered in a college classroom without benefit of visual aids, or other props. Subjects listened to a lecture and were asked, both in a free-recall response and on a multiple choice test, what they could remember from the lecture.

Method

Subjects

Subjects were 22 undergraduate students enrolled in a section of Educational Psychology at the University of Northern Colorado. Subjects were informed that participation in the study was voluntary and were given an opportunity to perform an alternate activity during the class time. All 22 subjects attended the lecture and took the subsequent tests, receiving credit toward course requirements for their participation.

Materials

The 1500-word lecture discussed specific aspects of Native American arts and crafts as they relate to the spiritual and religious rites of various tribes. Numerous phrases designed to evoke vivid visual images were incorporated at roughly equal intervals. The visual images were complex but highly visualizable (e.g. "The young women of the Hopi tribe wrap their long black hair into two flat back spirals like big cinnamon buns on the sides of their heads.") Images were rated by four independent raters who were asked to identify the visual images in the lecture. Only those phrases chosen by all four raters were considered to be imagery-evoking material.

For the purpose of free-recall coding and multiple choice test construction, clauses within the lecture were classified into three categories. Those clauses containing visual image material (such as the above passage about the Hopi women's hair) were coded as Visual (V). Material that was not visual in nature but followed in close proximity (within two sentences of visual image material) was coded as Proximal (P). Clauses that were not located near any image-evoking material (more than two sentences distant) were coded as Nonproximal (N). The entire script of the lecture, as delivered, is included in Appendix A.

A 30-item multiple choice test was prepared from the lecture, comprised of three subtests with ten questions each from the three categories. A Kuder-Richardson 20 analysis yielded an internal consistency reliability of .72 for overall test scores.

Procedure

Subjects were informed that they would hear a lecture on Indian Art and would later be asked to recall the information presented. They were instructed to listen but not take notes or otherwise record the lecture. The oral presentation was read from the script and lasted approximately ten minutes, with no breaks during the delivery.

Following the lecture, students took part in normal classroom activities for a period of approximately twenty minutes. This interval was intended to control for working memory which might aid students with recall, and students were kept occupied to prevent them from further processing the lecture material by thinking about it or discussing it with each other.

After the twenty-minute interval, subjects were given a sheet of blank paper and asked to write down everything they remembered from the lecture material. They were asked to head the blank paper with a pseudonym of their choice and informed that they would use the same pseudonyms on the multiple choice test. After 15 minutes, subjects were told to stop writing, the free-recall papers were collected, and the multiple choice test was distributed. The majority of the subjects took approximately ten minutes to complete the test, and all were allowed to finish.

Results

Phrases in free recall responses were coded for correspondence to phrases and general ideas presented in the

lecture. Frequency counts were made for each category, (Visual, Proximal, and Nonproximal), with each independent phrase or idea counted as one occurrence. Two raters scored the free recall tests, and interrater reliability was .92. The most frequently recalled items from the lecture are presented, in order of frequency of occurrence, in Table 1 of Appendix C.

Three subscores and a total test score were computed for both the multiple choice test and the free recall responses. A one-factor repeated measures analysis of variance was conducted on each dependent measure, with an *a priori* alpha level set at .05.

On the free recall test, subjects recalled significantly more Visual and Proximal phrases (Ms = 7.0 and 6.5, respectively) than Nonproximal phrases (M = 2.2; $F_{2,21} = 63.73$, $p<.0001$). A similar pattern emerged on the multiple choice test: subjects answered V and P items more accurately (Ms = 7.9 and 7.9, respectively) than N items (M = 4.7; $F_{2,21} = 49.37$, $p<.0001$). means and standard deviations are presented in Table 1.

TABLE 1

EXPERIMENT 1 -MEANS AND STANDARD DEVIATIONS

	MULTIPLE CHOICE		FREE RECALL	
	mean	s.d.	mean	s.d.
Visual:	7.9	1.2	7.0	1.9
Proximal:	7.9	1.9	6.5	2.1
Non-prox:	4.7	1.2	2.2	1.1
TOTAL:	20.5	3.3	15.7	4.1

Experiment 2

This experiment sought to investigate further the role of visual imagery in lecture text recall by adding an instruction variable and lengthening the delay between lecture and testing. Assuming that the formation of visual images was simply adding another layer of encoding, it was hypothesized that subjects who were instructed to take notes during the lecture (an additional means of encoding) would perform better on subsequent recall tasks than those subjects who only formed images.

Method

Experiment 2 (N=23) was similar to Experiment 1, with two exceptions. First, subjects were randomly assigned to one of two instruction conditions: Note-taking or Imaging. Second, the time interval between the lecture and test was increased to five days.

Subjects were again undergraduate students who consented to participate in the experiment. Upon entering the classroom, each subject was handed a randomized slip of folded paper with instructions inside. Imagers were instructed not to take notes, but to form mental images to help them recall the lecture. Note-takers were instructed to take notes to help them remember the lecture. All subjects were instructed not to talk about the lecture or instructions, and notes were collected from the Note-takers to ensure that they would not review them before the test. The lecture was delivered as in Experiment 1.

At the next class meeting (five days later), subjects were given opportunity for free recall, using the same method as Experiment 1. The multiple choice test was administered as in Experiment 1.

Results

A one-factor repeated measures analysis of variance was conducted on each measure for each instruction group, with an *a priori* alpha level set at .05. Analysis of the scores revealed that both groups of subjects had multiple choice test scores that were highest for Proximal and Visual (Ms =6.2 and 5.6, respectively) and lowest for Nonproximal (M =4.2; $F_{2,21}$ = 28.13, $p<.0001$). Notetakers outperformed imagers, as we had hypothesized, but only slightly. The difference in free recall scores of notetakers and imagers was not significant (F = 1.13, $p>.05$).

In the free recall responses, scores for the Proximal and Visual were again better than scores for the Nonproximal. Most scores were lower than in Experiment 1, presumably due to the longer recall delay.

The interaction between instruction and category of information was not significant (F = 2.11, $p>.05$). There were no other significant effects found by these analyses. See Table 2 for means and standard deviations of multiple choice and free recall measures.

TABLE 2

EXPERIMENT 2 - MEANS AND STANDARD DEVIATIONS

	MULTIPLE CHOICE		FREE RECALL	
	mean	s.d.	mean	s.d.
NOTETAKERS:				
Visual:	5.7	1.7	3.4	2.0
Proximal:	7.1	1.9	3.7	2.3
Non-prox:	3.5	1.2	1.7	1.0
TOTAL:	16.3	3.3	8.8	4.5
IMAGERS:				
Visual:	4.9	1.6	2.8	1.8
Proximal:	5.8	1.8	2.2	1.6
Non-prox:	3.3	1.6	1.5	0.8
TOTAL:	14.0	3.2	6.5	3.4

Experiment 3

Method

Experiment 3 (N=29) was similar to Experiment 1, with three exceptions. First, as in Experiment 2, subjects were randomly assigned to one of two instruction conditions: Note-taking or Imaging. Second, the time interval between the lecture and test was two days. And third, because of time constraints, only the multiple choice test was given.

Subjects were randomly assigned to groups, as in Experiment 2, and given the same instructions. The lecture was delivered as in Experiment 1. At the next class meeting (two days later), subjects were given the multiple choice test as administered in Experiment 1.

Results

A one-factor repeated measures analysis of variance was again conducted on each measure for each instruction group, with an *a priori* alpha level set at .05. Analysis of the scores revealed the same trend as in Experiment 2--both groups of subjects had multiple choice test scores that were highest for Proximal and Visual (Ms = 6.1 and 5.8, respectively), and lowest for Nonproximal (M = 4.0; $F_{2,21} = 12.01$, $p<.001$).

It had been expected that the scores for Experiment 3 would be higher than for Experiment 2, because the delay was shorter. The scores were not significantly different. It is speculated that this is due to the lack of free recall. As in Experiment 2, Notetakers did not score significantly higher than Imagers. See table 3 for means and standard deviations.

TABLE 3

EXPERIMENT 3 - MEANS AND STANDARD DEVIATIONS

	MULTIPLE CHOICE ONLY	
	mean	s.d.
NOTETAKERS:		
Visual:	5.9	2.3
Proximal:	6.5	2.2
Non-prox:	4.1	2.0
TOTAL:	16.7	4.8
IMAGERS:		
Visual:	5.7	2.2
Proximal:	5.6	2.2
Non-prox:	4.0	1.5
TOTAL:	15.6	3.9

Discussion

All three studies yielded the same result: highly visualizable material facilitates recall of non-visual material presented in close temporal proximity to it. The implications for classroom practice are clear: interspersing abstract lecture material with imagery-evoking phrases (perhaps giving concrete examples or presenting particularly vivid details) may enhance recall for that abstract material.

More research should be forthcoming on the spread of recall from visualized items to related information, perhaps answering the questions of how extensive the spread may be, and whether this spreading influence of imagery is related to instruction or modality preference. Continued research will undoubtedly raise further questions, as we seek to understand further the role of visual imagery in memory and learning.

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Appendix A

Lecture on Indian art for Visual Imagery experiments.

Indian art and religion are intricately intertwined as a single aspect of their culture. Before contact with White men or each other, the art of various Indian tribes shared several common characteristics. Art objects were made primarily of found materials, like clay, wood and grasses. Everyday items were crafted with utility in mind, yet showed considerable talent and skill in the work. However, the majority of art items were designed and used only for ceremonial or religious rituals.

Many ceremonial acts were associated with the crafting of items to be used for religious purposes. The false face masks of the Iroquois were an example of this. Before the Iroquois carver could begin carving the distorted and exaggerated human face out of a living tree, he had to first speak to the tree. He would then feed the tree and mask tobacco before separating the mask from the living tree. The mask could lose its power or even turn against the carver if these complex rites were were not carried out with perfection.

An Indian would not think of his or her work in terms of "Art" but more likely in terms of just "good work". The display of skill and quality in basketry was a source of pride and competition among the young women of the tribe. A girl had to be able to make good baskets before she was considered worthy of marriage, and often one's skills were a factor in being chosen as a bride.

The culture of many Indian tribes of the northwest involved rituals and traditions we miht find strange. Some of these tribes showed off their status and wealth by making beautiful things and

then destroying them or giving them away to other families. This tradition, called potlatch, was seen as gaily decorated canoes full of fish, fruit, and intricate carvings were pushed burning out to sea and sunk. Then the other wealthy families would feel forced by tradition to show off their status by destroying or giving away even more. Eventually all were impoverished. These Indians worked im materials such as wood and stone, and some good works in copper have also come from this area.

The artisans of the Northwest were extremely skilled at fitting their work together into the area and form of the object being decorated. The Tlinget were probably the most subtle and sophisticated in their sculpture, sensitive and careful. A more powerful, impressive form was used by the artists of the Kwakiutl tribes. These tribes left us intricately carved ducks, with shell eyes and feathers embedded in clay to make them lifelike. But, like most of their creations, these ducks had a practical purpose - they were hollowed on the bottom so they could be worn on the hunters' heads as they hid in the lakes waiting for real ducks to hunt.

Haida art is marked by expertise and precision. Their arts are carefully thought out, and show strength of expression. The Haida were skilled carvers, doing some of the stone work found in the area. Their style fell somewhere between the cautious Tlingit and the brash, bold Kwakiutl.

The Eskimo artists of the far north were skilled at combining several materials and numerous small parts into a finely crafted work of art. They were more humorous in their protrayal of the

human condition, perhaps as a refleciton of the harsh conditions in their daily life. Eskimo artisans created comical turquoise and shell mosaics of playful seals and polar bears which have been found in this area. The ingenuity of this people shows in their willingness to make the tools man needs to do this tedious, detailed work. Since the Eskimo's lands lacked natural material, much of their work was done in ivory and bone. Ritual structures indicate that these Indians felt a need for a striking an dmeaningful setting for their places of worship.

The tribes of the Great Plains area have given us much of our stereotypical view of "Indians" with their feathered war bonnets and face paint. With shells or pieces of carved bone sewn to his clothes to make noise, his shield bearing pictures of his past battles, he presented an awesome figure riding into battle. His body decorations, a symbolic history of his accomplishments, also served to intimidate his enemies and remind them of his power and status. Even his horse was ritually decorated to further enhance his power.

These Great Plains Indians made use of buffalo hides and other natural materials in much of their work. There was a purpose behind each item we now call "Art", and it usually involved spirits or nature. A geometric bird figure spreads its majestic wings across the breastplate of a warrior. This may appear to be simple decoration, but to the brave this bird had a deeper meaning - it was his guardian spirit shielding him from harm. Porcupine quills were flattened and dyed, then sewn onto their clothing. These garments were highly valued among braves. The Indians believed

that the quills gave the wearer power or good fortune.

Buffalo hides, tanned and stretched into a round flat surface, provided the canvas for paintings. Thehistory of the tribes was recounted by means of annual symbols, called Winter Counts. The picture of a lone, bent pine tree depicts a place where a hard winter was spent The white buffalo might remind the tribe of the winter they successfully hunted this great white spirit. Personal history was also recorded. Each brave would recount his own accomplishments with symbols of his victories. The scalps of his enemies hanging from poles outside his tepee, or the teeth of animals he killed, strung around his neck, told a warrior's personal story.

The depiction of spirits were seen through much of the "Art" of Indians. The spirits demanded respect, and were honored wherever possible. Long, feathered pipes were made in the form of birds or animals. The user might feel that he could draw the power of the creature's spirit out of its mouth along with the acrid smoke. Indians smoked these pipes during rituals and ceremonies.

Stone figures of women with large breasts and round bellies were found in many of the camps. These show a strong resemblance to those found in ancient Mexico, even though the two cultures had not had any contact at the time.

The Indians of the Southwest also used the common materials available to them in their ceremonial arts. The Navajo Sandpainting is an example of the careful ritual involved in these meaningful creations, and it was usually done to petition help or healing from the spirits. The wizened old medicine man would chant

prayers and songs as he carefully trickled out the specific materials called for in the painting. Only the hand could be used in creating a sandpainting, and the painting had to be destroyed before the sun set. The patient sat on or near the painting as it was created, praying and drinking a mixture of medicine. The strict forms for each type of Sandpainting had to be carefully followed. The different colors in the sand painting come from not only sand, but sacred herbs and other natural materials, and were guarded carefully.

The pottery which we find in many Indian artifact sites tells a story of the tribe's lifestyle. The free and happy-go-lucky Hohokams expressed themselves with lively human and animal figures dancing around their red and tan colored pots. The more strict Anasazi used black and white geometrical patterns such as zig-zags, stripe, and lightning bolts. Only special ceremonial vases and cups were decorated with the sacred spiral symbols.

Even the personal decorations of the Indian had meaning and message understood by everyone in the tribe. The long, black hair of the beautiful Hopi maidens was worn loose until puberty, when the girl became available for marriage. Then she began to wrap her hair into two flat back-spirals, like big cinnamon buns, on the sides of her head. These spiraled buns could end up almost a foot in diameter if she had very long hair. After marriage, she would want everyone to know she was someone's wife, so she reversed the direction of the spirals.

The famous Indian blankets and rugs which have become so valuable also have deep meanings hidden within their patterns.

While most Indian blankets have a bold border around the outside, with pictures of animals within, they also have a "Spirit Line" - a single thread of a contrasting color, running through the picture and the border, out to the very edge. This intentional "flaw" is meant to keep the spirit from becoming trapped in the pattern.

One of the most fascinating types of evidence left behind by Indians is the petroglyph, or Rock Art. The symbols of men on horseback, wearing tall hats, can be seen on rock walls in Utah. These tell a story of history in a state of change, depicting the coming of the Europeans. Rock art is usually practical, and is placed in easy view of the ground. The strange single and double spiral patterns carved in the cliffs along the riverbeds in Arizona are said to be roadmaps for Hopi Indians migrating to their ancestral holy lands. Each turn of the spiral represents a bend in the river, and the direction of the turn tells the followers which way to turn. These carefully placed symbols can still be follwed today. They lead to the second mesa area of northern Arizona, where Hopi legend says the people will gather.

Whether showing off their wealth, skillfully crafting baskets and pottery for everyday use, or performing one of their many rituals of worship, the Indian artisans have left their mark on our country. Much of the archaeological wealth left by these people was ceremonial in nature, indicating a hgihly organized and religious civilization.

The Indians have a saying, "We don't think about "Art" as such. Every child, before he is born, is conscious of art and music and dance. It is simply within us."

Appendix B

1. What form were the False Face masks of the Iroquois?
   a. Animals such as birds, coyotes, etc.
   b. Devils or demons
   c. Distorted or exaggerated human faces
   d. Beautiful maidens with long black hair

2. Which tribe's skills included combining several materials?
   a. The Eskimo
   b. The Kwakiutl
   c. The Great Plains
   d. The Hopi

3. Which might be displayed as proof of a warrior's victories?
   a. Stripes of red and black paint on his arms and chest
   b. Eagle feathers in his hair
   c. Scalps hung on poles and necklaces of animal teeth
   d. A robe made of white buffalo hide

4. The Tlingit could be characterized as
   a. Bold and brash
   b. Sensitive and subtle
   c. Deeply religious
   d. Humorous in their creativity

5. How did the Kwakiutl tribe hunt waterfowl?
   a. By setting out canoes full of food
   b. With large nets woven by the women
   c. By hiding in the lake under duck decoys
   d. With dogs which caught the birds and brought them back

6. Which was typically used only on sacred vessels?
   a. Human figures representing the gods
   b. Spirals
   c. The coil method of construction
   d. Red clay

7. Why were shield pictures, face paint, shells and animal teeth used?
   a. To intimidate a brave's enemies
   b. To attract a wife
   c. To show status within the tribe
   d. To frighten away evil spirits

8. Indian girls had to do what before they could marry?
   a. Make good baskets
   b. Make good pottery
   c. Bear a child
   d. Carve a mask

9. Why did wealthy tribesmen give away or destroy possessions?
   a. To make peace with neighboring tribes
   b. To gain a valuable wife
   c. To appease the gods
   d. To show off one's status or wealth

10. Why were pipes made in the shape of bird or animals?
   a. They felt they could draw the spirit out with the smoke
   b. The Indians smoked to attract animals to hunt
   c. The shaman, or medicine man, dressed as a bird
   d. The animals and birds brought good crops

11. What happened if an Iroquois did not feed his mask and tree?
    a. The tree would wither and die before the winter
    b. He would not have a good crop of corn
    c. The mask would lose power or turn against him
    d. His wife would not bear him a son

12. How were possessions commonly destroyed in potlatch?
    a. Burned and then buried
    b. Dropped off steep cliffs
    c. Broken with clubs and sticks
    d. Piled in gaily decorated canoes, burned and sunk

13. Porcupine quills were believed to bring an Indian
    a. Potency and fertility
    b. Success in hunting
    c. Many sons
    d. Power or good luck

14. Rock art figures of men on horseback told the story of
    a. The coming of the Europeans
    b. Chiefs of the tribe
    c. Hunters following the buffalo
    d. Other tribes which came to trade

15. Indians worshipped
    a. Out on the open plains
    b. In caves, or kivas, within sacred mountain ranges
    c. In the tepee of the medicine man or shaman
    d. In striking ritual structures

16. The Anasazi usually decorated their pottery with
    a. Happy human figures or animals from their area
    b. Black-and white geometrical figures
    c. Red and blue circles
    d. Figures of birds and corn

17. What tools were used to create a Sandpainting?
    a. Only the medicine man's hand
    b. Only tools carved of natural materials
    c. Wooden boxes of different colors of sand
    d. Leaves and brushes of cedar bark

18. The Sandpainting gets its colors from
    a. The colored sands of the Painted Desert
    b. Natural pigments like blood and animal hair
    c. Herbs, plants, and sand
    d. The Medicine man's bag of secret materials

19. The Eskimo crafted mosaics of:
    a. Comical seals and polar bears
    b. Whales
    c. Caribou hunting scenes
    d. Their ancestors

20. An Indian warrior's horse was commonly
    a. Subjected to rituals to increase his power
    b. Fed only corn before riding into battle
    c. Ridden bareback with no reins
    d. A stallion, kept strictly away from the mares

21. Where would a white buffalo be depicted?
    a. On a brave's breastplate
    b. On a warrior's shield
    c. On the walls of the chief's tepee
    d. On a "Winter Count" picture recounting the hunt

22. What purpose did a Sandpainting usually serve?
    a. To ensure success in hunting buffalo
    b. To heal the sick person who sat on the painting
    c. To bring spirits back from the dead
    d. To provide a permanent record of the tribe's history

23. Which of these were found in both America and Mexico?
    a. Stone carvings of big-breasted, round-bellied women
    b. Porcupine quill decorations on clothing
    c. Cedar bark dolls with feathers in their hair
    d. Figures of bighorn sheep carved in wood

24. The Hopi symbols carved in rock lead to
    a. The sacred burial grounds
    b. Favorite hunting spots
    c. The second mesa
    d. Rivers or lakes

25. Why did a Hopi woman wrap her hair in the opposite direction?
    a. To show she was the daughter of a chief
    b. To ask the spirits for children
    c. To tell others that she was now married
    d. To attract a husband

26. The Haida of the Northwest were noted for their work in
    a. Wood
    b. Stone
    c. Bone and ivory
    d. Animal skins

27. What might the bird figure on a brave's breastplate mean?
    a. The bird was his first kill
    b. Birds brought good crops of corn
    c. Birds helped the hunters find buffalo
    d. It was his guardian spirit protecting him

28. How did Hopi women wear their hair after reaching puberty?
    a. Long and loose
    b. In a single braid in back
    c. Wrapped around the top of the head
    d. In two spiraled buns, one on each side of the head

29. The tribes of the Northwest were skilled at
    a. Using all the material found in an animal
    b. Fitting the work into the form of the material
    c. Using animal skins to create comical masks
    d. Making lifelike carvings out of bone and ivory

30. Indian blankets had a "Spirit Line" with the purpose of
    a. Impressing other people with one's spirituality
    b. Providing proof of ownership of the blanket
    c. Keeping the spirit from being trapped in the blanket's pattern
    d. Reminding the Spirits that the owner was one of their children

APPENDIX C

Free Recall
Experiments 1 and 2 combined

Most frequent responses: **CATEGORY** (frequency)

Hopi women who wrap their hair in coils on their heads. **V** (25)
>>> Reverse the direction of the spirals when they marry. **P** (23)
False Face masks carved out of live tree. **V** (24)
>>> Before carving mask, had to feed the tree. **P** (11)
Potlatch - gave away wealth (in canoes). **V** (23)
>>> Done to show status, led to poverty. **P** (13)
Art and religion major themes in their culture. **N** (20)
Had to have skills before marrying. **N** (17)
Duck decoys with shell eyes and feathers. **V** (19)
>>> Ducks worn on hunters' heads to hide in lake. **P** (14)
Figures of women with big breasts and round bellies. **V** (14)
>>> These found in different places with no contact. **P** (16)
Sandpainting - patterns in the sand. **V** (13)
>>> Done only with the hand, to heal sick person. **P** (17)
Patterns in the pottery tell which culture. **V,P** (19)
Necklaces made of teeth of animals they killed. **V** (13)
Scalps on poles outside of teepees. **V** (9)
Pipe in form of birds. **V** (8)
>>> Smoked to draw out the spirit. **P** (7)
Eagle on the breastplate. **V** (7)
>>> Guardian spirit. **P** (6)

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